DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: MUDGETTS POND		Lake Area (ha):	3.76
Town: DORCHESTE	R	Maximum depth (m):	7.3
County: Grafton		Mean depth (m):	2.0
River Basin: Connection	ut	Volume (m³):	76500
Latitude: 43°46'03"		Relative depth:	3.3
Longitude: 71°59'34"	W	Shore configuration:	1.02
Elevation (ft):	1710	Areal water load (m/yr):	
Shore length (m):	700	Flushing rate (yr^{-1}) :	12.30
Watershed area (ha):	128.4	P retention coeff.:	0.45
% watershed ponded:	0.0	Lake type: n	atural

BIOLOGICAL:	11 February 1998	6 August 1997
DOM. PHYTOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	MERISMOPEDIA 70%
#2		
#3		
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		4.53
DOM. ZOOPLANKTON (% TOTAL) #1	ROUND CILIATE SPP 43%	KELLICOTTIA 38%
#2	KELLICOTTIA 25%	NAUPLIUS LARVA 17%
#3	ROTIFER SPP 17%	KERATELLA 16%
ROTIFERS/LITER	82	108
MICROCRUSTACEA/LITER	1	52
ZOOPLANKTON ABUNDANCE (#/L)	146	187
VASCULAR PLANT ABUNDANCE		Scattered
SECCHI DISK TRANSPARENCY (m)		2.3
BOTTOM DISSOLVED OXYGEN (mg/L)	0.2	0.2
BACTERIA (E. coli, #/100 ml) #1		
#2		
#3		·

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 2.5 Hypolimnion volume (m^3) : 3500 Anoxic volume (m^3) : 3500

CHEMICAL:			MUDGETTS DORCHEST			
	11 Febru	uary 1998	6 1	6 August 1997		
DEPTH (m)	2.0	4.0	1.0	3.0	6.0	
pH (units)	6.0	6.0	5.8	5.9	6.0	
A.N.C. (Alkalinity)	5.1	6.6	2.9	2.5	5.6	
NITRATE NITROGEN	0.13	0.11	< 0.05	< 0.05	< 0.05	
TOTAL KJELDAHL NITROGEN	0.20	0.40	0.38	0.40	0.70	
TOTAL PHOSPHORUS	0.008	0.014	0.012	0.013	0.036	
CONDUCTIVITY (µmhos/cm)	27.8	28.2	21.1	20.1	23.4	
APPARENT COLOR (cpu)	44	60	47	50 ,	70	
MAGNESIUM			0.36			
CALCIUM			2.2			
SODIUM			1.0			
POTASSIUM			0.25			
CHLORIDE	< 2	< 2	< 2	< 2	< 2	
SULFATE	4	3	3	4	3	
TN : TP	41	36	32	31	19	
CALCITE SATURATION INDEX			4.7			

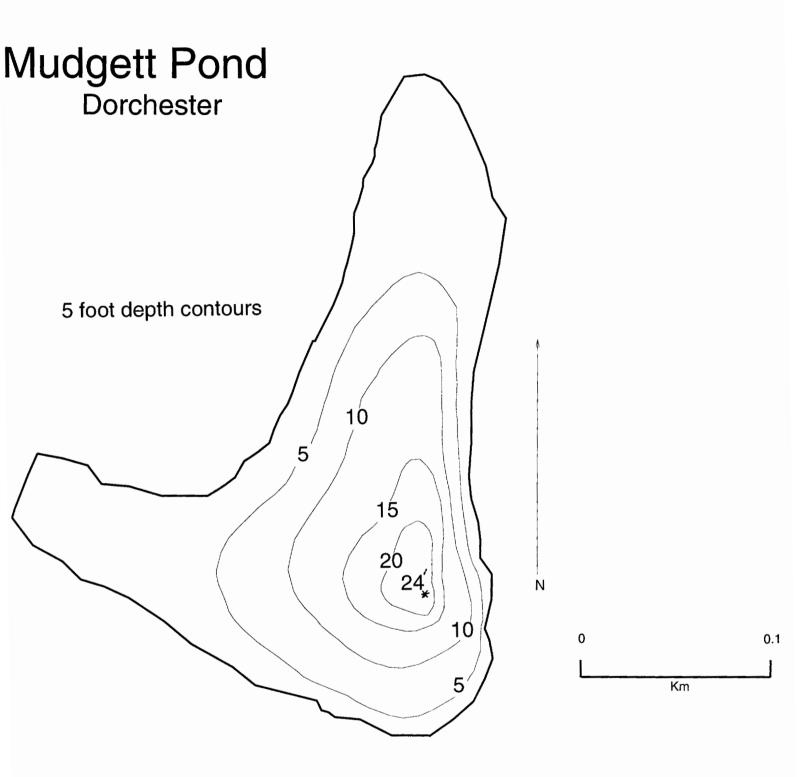
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1997

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
4	3	1	1	9	Meso.

COMMENTS:

- 1. This remote pond was sampled cooperatively with the NH Fish & Game Department.
- 2. Mudgetts Pond is a relatively acidic, tea-colored, mesotrophic pond with low conductivity and only fair water clarity (8 feet).
- 3. The pond bottom was devoid of dissolved oxygen in both winter and summer. The loss of oxygen under the ice is unusual; less than 1% of NH lakes (5 out of 566) have winter bottom dissolved oxygen values of 0.2 mg/L or less. This suggests a very organic bottom sediment exerting an oxygen demand on the overlying waters.



FIELD DATA SHEET

LAKE: MUDGETTS POND

TOWN: DORCHESTER DATE: 08/06/97 WEATHER: SUNNY, CLEAR & WARM

DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	22.5	7.7	87 %
1.0	20.5	7.4	81 %
2.0	20.0	6.7	73 %
3.0	14.0	7.3	70 %
4.0	10.0	2.6	23 %
5.0	8.0	0.1	1 %
6.0	7.5	0.1	1 %
6.5	7.5	0.2	2 %
		<u> </u>	

SECCHI DISK (m): 2.3

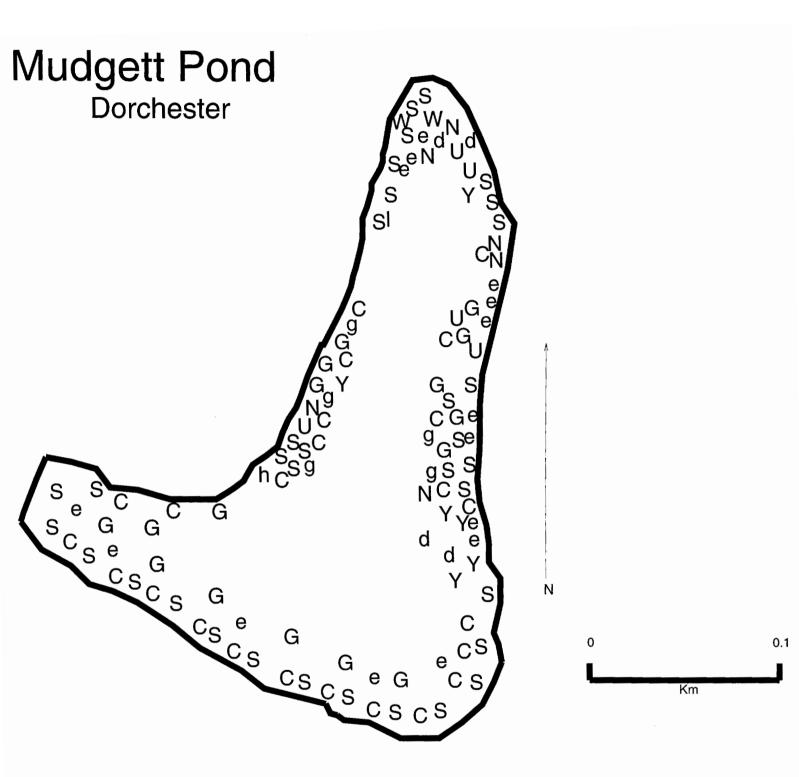
COMMENTS:

Although small in volume, the entire hypolimnion was anoxic.

BOTTOM DEPTH (m): 7.0

TIME: 1415

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY

LAKE: MUDGETTS POND TOWN: DORCHESTER DATE: 08/06/97 PLANT NAME Key ABUNDANCE **GENERIC** COMMON S Sparganium Bur reed Scattered U Utricularia Bladderwort Sparse N Nymphaea White water lily Sparse Gramineae Grass family Sparse h Hypericum St. John's-wort Sparse Y Nuphar Yellow water lily Scattered Leatherleaf С Chamaedaphne calyculata Sparse Myrica gale Sweet gale g Sparse Eleocharis Spike rush Scattered е W Pondweed Potamogeton Sparse Ι Iris Iris Sparse d Dulichium arundinaceum Three-way sedge Sparse

OVERALL ABUNDANCE: Scattered

GENERAL OBSERVATIONS:

1. Plants were scattered around most of the shoreline - but not in dense stands.